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EXAMINER	
BOYER, RANDY	

ART UNIT	PAPER NUMBER
1797	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/822,859	MANNA ET AL.	
	Examiner	Art Unit	
	RANDY BOYER	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 July 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12,14-17,19 and 21-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12, 14-17, 19, and 21-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Examiner acknowledges Applicant's response filed 8 July 2008 containing amendments to the claims and remarks.

2. Claims 1-12, 14-17, 19, and 21-26 are pending.

3. The previous grounds for rejection of claims 1-12, 14-17, 19, and 21-26 under 35 U.S.C. 103(a) are withdrawn in view of Applicant's amendment to the claims.

4. New grounds for rejection, necessitated by Applicant's amendment to the claims, are entered under 35 U.S.C. 102(b) and 35 U.S.C. 103(a).

5. Objection is entered with respect to claim 10. The objection and rejections follow.

Claim Objections

6. Claim 10 is objected to for lack of antecedent basis in the claim.

7. With respect to claim 10, the claim recites "nickel loading on alumina." Examiner notes that neither claim 10 nor claim 1, from which claim 10 depends, previously recites "alumina." Thus, there is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102 / 35 USC § 103

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office Action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1-9, 14-17, 19, 21-23, 25, and 26 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hantzer (US 6,187,176).

12. With respect to claims 1-9, 15-17, 21-23, 25, and 26, Hantzer discloses a process for preparing polymer or food grade hydrocarbon solvents of naptha range containing very low aromatics from naphtha range petroleum feedstock (see Hantzer, Abstract), the process comprising the steps of: (a) heating the naphtha range petroleum feedstock (e.g., a raffinate stream (distillate fraction) derived from solvent extraction and having sulfur content less than 50 ppm and low aromatics content) (see Hantzer, column 4, lines 49-53; and Table II) to a temperature in the range of 80°C to 150°C (see Hantzer, column 10, lines 37-38); (b) adding hydrogen to the naphtha range petroleum feed stock at a pressure between 5 bar to 30 bar (see Hantzer, column 10, lines 39-41); (c) passing the mixture through a reactor having a nickel based catalyst (e.g., nickel catalyst supported on alumina) (see Hantzer, column 5, lines 15-20; and column 9, lines 7-9); and (d) removing any excess hydrogen to obtain the polymer or food grade hydrocarbon solvents of naphtha range containing very low aromatics (see Hantzer, Abstract; and Examples).

13. With respect to claim 14, Hantzer discloses wherein the polymer or food grade solvents obtained may contain less than 1 ppm sulfur and 86% reduction in aromatic content of the feed (see Hantzer, Example 1).

14. With respect to claim 19, Hantzer discloses wherein the nickel catalyst may be oxidized and reduced before loading into the reactor (see Hantzer, column 5, lines 36-41; and column 6, lines 14-15).

15. Claims 1-8, 10, 14-17, 19, and 21-26 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Polanek (US 5,726,484).

16. With respect to claims 1-8, 10, 15-17, 19, and 21-26, Polanek discloses a process for preparing polymer or food grade solvents of naptha range containing very low aromatics from naphtha range petroleum feedstock (see Polanek, column 1, lines 4-10), the process comprising the steps of: (a) heating the naphtha range petroleum feed stock (e.g., a low-boiling raffinate stream derived from solvent extraction and having low sulfur and aromatics content) (see Polanek, column 4, lines 19-32 and 43-54; and Table 1) to a temperature in the range of 70°C to 180°C (see Polanek, column 5, lines 5-9); (b) adding hydrogen to the naphtha range petroleum feed stock at a pressure between 5 bar to 30 bar (see Polanek, column 5, lines 5-9); (c) passing the mixture through a reactor having a nickel based catalyst (e.g., one with 10 to 70 wt% nickel loading) (see Polanek, column 2, lines 8-14); and (d) removing any excess hydrogen to obtain the polymer or food grade hydrocarbon solvents of naphtha range containing very low aromatics (see Polanek, column 5, lines 15-19; and Examples).

17. With respect to claim 14, Polanek discloses wherein the polymer or food grade hydrocarbon solvents obtained contain nil olefins, sulfur less than 1 ppm, and very low aromatics (see Polanek, column 3, lines 55-67; and Table 2).

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

19. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

20. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

21. Claims 10-12 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hantzer (US 6,187,176).

22. With respect to claims 10 and 24, see discussion *supra* at paragraph 12.

Hantzer does not disclose wherein the nickel loading is in the range of 10 to 70 wt%.

However, Hantzer discloses wherein the nickel loading may be about 5 wt% (see Hantzer, column 5, lines 52-53).

Therefore, Examiner finds Applicant's limitation for nickel loading in the range of 10 to 70 wt% to be of no patentable consequence in view of Hantzer, since the person having ordinary skill in the art would recognize that any metal loading of *at least* 5 wt% (e.g., 10 wt% or more) would be effective to carry out the process of Hantzer.

23. With respect to claims 11 and 12, Hantzer is not specifically limited in any way with respect to the catalyst surface area or pore volume. Thus, the catalyst and support can conceivably have *any* surface area and pore volume so long as the objectives of Hantzer are met.

24. Claims 1-12, 14-17, 19, and 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winquist (US 5,391,291) in view of Polanek (US 5,736,484). Alternatively, claims 1-12, 14-17, 19, and 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winquist (US 5,391,291) in view of Polanek (US 5,736,484), as evidenced by Hantzer (US 6,187,176).

25. With respect to claims 1, 17, and 26, Winquist discloses a process for preparing polymer or food grade hydrocarbon solvents of naphtha range containing very low aromatics from naphtha range petroleum stock (see Winquist, Abstract; column 1, lines 17-25; column 2, lines 18-27), the process comprising: (a) heating the naphtha range

petroleum feed stock to a temperature in the range of 70°C to 180°C (see Winquist, column 8, lines 6-10); (b) adding hydrogen to the naphtha range petroleum feed stock at a pressure between 5 bar and 30 bar (see Winquist, column 8, lines 30-37); (c) passing the mixture through a reactor having a catalyst (see Winquist, column 2, lines 30-34); and (d) removing any excess hydrogen to obtain the polymer or food grade hydrocarbon solvents of naphtha range containing very low aromatics (see Winquist, Abstract; column 1, lines 17-25; and column 9, lines 10-61).

Winquist does not disclose wherein the catalyst is a nickel based catalyst (see Winquist, column 5, lines 49-57).

However, Polanek discloses a process for preparing polymer or food grade hydrocarbon solvents of naptha range containing very low aromatics using nickel based catalyst, e.g. a catalyst containing from about 65% to about 80% nickel as nickel oxide (see Polanek, column 2, lines 13-14). Polanek explains that using such a nickel catalyst provides the benefit of lower operating temperatures, thus reducing the energy input required for the process (see Polanek, column 2, lines 3-7). In this regard, Polanek further explains that reaction temperatures in the range of 100°C to 250°C are preferred, although reaction temperatures as low as 40°C or as high as 300°C may be used (see Polanek, column 5, lines 6-9). In contrast, the preferred reaction temperature of Winquist is in the range of 225°C to 375°C (see Winquist, column 8, lines 6-10).

Therefore, the person having ordinary skill in the art would have been motivated to modify the process of Winquist so as to incorporate the use of the nickel catalyst of Polanek in order to carry out the same reaction at lower reaction temperatures, thereby

achieving an energy cost savings. Examiner notes that additional cost savings would also be expected in using the nickel catalyst of Polanek versus the precious metal (platinum, palladium) catalyst of Winquist, thus providing additional motivation to the person having ordinary skill in the art to use the nickel catalyst of Polanek in the process of Winquist.

Finally, the person having ordinary skill in the art would have had a reasonable expectation of success in using the nickel catalyst of Polanek in the process of Winquist because: (1) both Winquist and Polanek are directed to processes for the hydrogenation of aromatic species in white oil precursor feed stocks; and (2) the hydrogenation reaction conditions of Winquist (see Winquist, column 8, lines 6-43) are consistent with and overlapping with those of Polanek (see Polanek, column 5, lines 5-14).

26. With respect to claims 2, 15, and 25, it is known to use raffinate streams derived from solvent extraction processes as feed stock for the preparation of polymer or food grade hydrocarbons (see Polanek, column 4, lines 15-26).

27. With respect to claims 3-5, 8, 16, and 21-23, Winquist discloses wherein the feed stream may contain sulfur content of ≤ 100 ppm (see Winquist, column 7, lines 15-16). Moreover, Polanek discloses the use of raffinate derived from solvent extraction as a feed for the preparation of polymer or food grade white oils (i.e. necessarily having very low aromatic content) (see Polanek, column 4, lines 15-26; and Table 1).

28. With respect to claims 6 and 7, Winquist discloses wherein the feed stream may have a boiling point in the range of 63°C to 110°C (see Winquist, Table 9). Moreover, it is known to use feed stocks with boiling points of less than 200°C as a starting material

for the preparation of polymer or food grade hydrocarbon solvents (see Polanek, column 4, lines 43-54).

29. With respect to claims 9, 10, 19, and 24, it is known to use alumina as a nickel hydrogenation catalyst support material (see e.g., Hantzer (US 6,187,176), Abstract; and column 5, lines 15-20). Moreover, Winquist discloses wherein his catalyst comprises alumina (see Winquist, column 5, lines 30-31), and Polanek discloses wherein the nickel catalyst loading may be about 65% by wt calculated as nickel oxide (see Polanek, column 2, lines 13-14; and column 3, lines 40-43).

30. With respect to claims 11 and 12, Polanek is not specifically limited in any way with respect to the catalyst surface area or pore volume. Thus, the catalyst and support can conceivably have *any* surface area and pore volume so long as the objectives of Polanek are met.

31. With respect to claim 14, Winquist discloses wherein the polymer or food grade hydrocarbon solvent obtained contains nil olefin, sulfur of 1 ppm, and very low aromatic content (see Winquist, Table 9).

Response to Arguments

32. Applicant's arguments with respect to all claims have been considered but are moot in view of the new grounds of rejection.

Conclusion

33. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office Action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

34. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randy Boyer whose telephone number is (571) 272-7113. The examiner can normally be reached Monday through Friday from 10:00 A.M. to 7:00 P.M. (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola, can be reached at (571) 272-1444. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RPB

/Glenn A Caldarola/

Acting SPE of Art Unit 1797